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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/526,335	11/16/2005	Tim Cheesright	DYOUN0287US	8953
23908 7590 11/19/2007 RENNER OTTO BOISSELLE & SKLAR, LLP 1621 EUCLID AVENUE NINETEENTH FLOOR CLEVELAND, OH 44115			EXAMINER SKOWRONEK, KARLHEINZ R	
			ART UNIT 1631	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/526,335	Applicant(s) CHEESERIGHT ET AL.	
	Examiner Karlheinz R. Skowronek	Art Unit 1631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 March 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The examiner of record has changed. Please direct all further correspondence to Karlheinz R. Skowronek whose telephone number is (571) 272-9047.

Claim Status

Claims 1-16 are pending.

Claims 1-16 are being examined.

Oath/Declaration

Response to Arguments

Applicant's arguments, see remarks, p. 7, filed 05 March 2007, with respect to the objection to the oath have been fully considered and are persuasive. The objection to the oath has been withdrawn.

Drawings

The drawings were received on 05 March 2007. These drawings are acceptable

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-16 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 1-16 are drawn to a process. A statutory process must include a step of a physical transformation, or produce a useful, concrete, and tangible result (State Street Bank & Trust Co. v. Signature Financial Group Inc. CAFC 47 USPQ2d 1596 (1998),

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AT&T Corp. v. Excel Communications Inc. (CAFC 50 USPQ2d 1447 (1999)). The instant claims do not result in a physical transformation, thus the Examiner must determine if the instant claims include a useful, concrete, and tangible result.

As noted in *State Street Bank & Trust Co. v. Signature Financial Group Inc.* CAFC 47 USPQ2d 1596 (1998) below, the statutory category of the claimed subject matter is not relevant to a determination of whether the claimed subject matter produces a useful, concrete, and tangible result:

The question of whether a claim encompasses statutory subject matter should not focus on which of the four categories of subject matter a claim is directed to -- process, machine, manufacture, or composition of matter--but rather on the essential characteristics of the subject matter, in particular, its practical utility. Section 101 specifies that statutory subject matter must also satisfy the other "conditions and requirements" of Title 35, including novelty, nonobviousness, and adequacy of disclosure and notice. See *In re Warmerdam*, 33 F.3d 1354, 1359, 31 USPQ2d 1754, 1757-58 (Fed. Cir. 1994). For purpose of our analysis, as noted above, claim 1 is directed to a machine programmed with the Hub and Spoke software and admittedly produces a "useful, concrete, and tangible result." *Alappat*, 33 F.3d at 1544, 31 USPQ2d at 1557. This renders it statutory subject matter, even if the useful result is expressed in numbers, such as price, profit, percentage, cost, or loss.

In determining if the claimed subject matter produces a useful, concrete, and tangible result, the Examiner must determine each standard individually. For a claim to be "useful," the claim must produce a result that is specific, and substantial. For a claim to be "concrete," the process must have a result that is reproducible. For a claim to be "tangible," the process must produce a real world result. Furthermore, the claim must be limited only to statutory embodiments.

Claims 1-16 do not require production of a tangible result in a form that is useful to the user of the process or apparatus. A tangible result requires that the claim must

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set forth a practical application to produce a real-world result. This rejection could be overcome by amendment of the claims to recite that a result of the process is outputted to a display, or to a user, or in a graphical format, or in a user readable format, or by including a result that is a physical transformation. The applicants are cautioned against introduction of new matter in an amendment.

Claims 13 and 14 are directed to an article of manufacture in the form of a computer readable medium. Claim 14 recites the computer readable medium is a signal carrier medium. The embodiment of the computer readable medium as a signal, recited in claim 14, is nonstatutory. Signals are not tangible and therefore the article of manufacture, recited in claims 13-14 is not tangible. Thus claim 13 has embodiments that are statutory and non-statutory, and is also rejected as being non-statutory.

Response to Arguments

Applicant's arguments filed 20 August 2007 have been fully considered but they are not persuasive. Applicant argues the amendment of claim 1 to include in the combining step a limitation to provide a score. The argument is not persuasive because the addition of "provide" to claim 1 does not rectify the lack of a tangible output of the claimed method. Applicant points to support for applicants position citing US PAT 6,996,476. The fact patterns between the '476 patent and the instant claims are different and relevant to the analysis of the instant claim 1. Applicant's amendment of claim 13 to direct the contents of the medium to functional descriptive material overcomes the rejection of claim 13-15 as non-statutory, however because the result

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method claim 1 and the medium of claim 13-14 are still not tangible, claims 1-16 remain rejection under 35USC 101 as being directed to non-statutory subject matter.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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5. Claims 1, 2, 6, 7, 8, 10, 11, 12, and 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ashworth (IDS, GB Patent Publication # 2,317,030, March 11th, 1998). This rejection is modified from the previous Office action.

The claims are drawn to a method of comparing molecules comprising:

- A) Providing field points of a first molecule,
- B) Determining, at the position of the field points of a first molecule, the field of a second molecule to obtain field points for a second molecule,
- C) Combining the information from (A) and (B) to obtain a score indicating similarity.

Ashworth discloses a method of determining field points for a molecule (abstract).

Ashworth discloses the ability to obtain field points for a molecule in relation to the field points of another molecule (page 4, lines 21-26). Furthermore, Ashworth discloses that one can determine a similarity score by comparing field points of a first and second molecule (page 8, lines 4-7). While Ashworth discloses a method for obtaining field points of a molecule in relation to another (as cited above), Ashworth does not specifically apply this method when comparing molecules to determine a similarity score.

With respect to claim 2, Ashworth discloses that the information associated with field points includes the position and size and extent. Furthermore, Ashworth discloses the use of equations in Vinter et al. (IDS, Journal of Computer Aided Molecular Design, Vol. 9, Pages 297-307) for calculations (page 10, lines 7-11) which applicant's specification details represent a field definition formula (page 12, lines 7-10).

With respect to claim 6, as referenced above, Ashworth discloses the use of the equations of Vinter et al. for the comparisons. Applicant discloses the equation used for comparison by Vinter et al. (specification, page 6, line 4) where the equation is taking the product of field point values (top line) which, as disclosed by Ashworth (as referenced above), consider size/extent and position.

With respect to claim 7, with the requirement for determining an aggregate score calculation, Ashworth discloses aggregate averaging (abstract, lines 10-11).

With respect to claims 8, and 10, they represent the limitations of claim 7 as applied in conjunction with claims 2 and 6, respectively. Since Ashworth discloses the limitations of claims 2 and 6 (as referenced above) and Ashworth is using an analogous method on the various molecules used to reach an aggregate value, Ashworth discloses the limitations of claims 8 and 10.

With respect to claim 11, since, as disclosed by Ashworth, the field size value is a value taken into account in defining the field point (as referenced above) and the field point values are energy values (measurement of energy extrema, for example, see Vinter et al., abstract), the field size values under consideration by Ashworth et al. represent energy values.

With respect to claim 12, Ashworth discloses the use of positive or negative maxima (abstract, line 4), wherein applicant's definition of minima is negative maxima (specification, page 7, lines 18-19). With respect to claims 13-16, Ashworth discloses a computer apparatus for carrying out the method (page 8, lines 19-23). Ashworth's disclosure of such an apparatus necessarily discloses a computer-

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interpretable medium with the method since the computer couldn't execute the method unless the computer had the method on a computer-interpretable medium.

Ashworth does not show the determination of a second molecule's field points relative to a first molecule.

It would have been obvious to one of ordinary skill in the art, at the time the invention was made to modify Ashworth's method to determine the similarity score between sets of molecules by determining a second molecule's field points in relation to that of the first molecule. One of ordinary skill in the art would have been motivated to do so, because, as suggested by Ashworth, one would expect changes in the field of a molecule relative to another molecule (page 4, lines 5-8). Hence, by determining a molecule's field points relative to another molecule, one would have a more accurate represent of the expected field.

Response to Arguments

Applicant's arguments filed 20 August 2007 have been fully considered but they are not persuasive. Applicant argues that the field of the second molecule is calculated rather than the field points of the second molecule which distinguishes the instant claims from Ashworth. This argument is not persuasive. Based on the guidance provided by the specification it is understood that a molecule's field is a collection of field points describing a distinct spatial distribution. Since Ashworth calculates field points of the second molecule using a first molecule, Ashworth as a result produces a set of field points and therefore a field. Applicant defines on p. 7, lines 10-16, that the term field sample values is used to refer to the field of a second molecule at a first

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molecule's field point and thus field sample values are field points of the second molecule, though not necessarily field extremes. Therefore, the method of claims 1, 2, 6, 7, 8, 10, 11, 12, and 13-16 are unpatentable over Ashworth.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karlheinz R. Skowronek whose telephone number is (571) 272-9047. The examiner can normally be reached on Mon-Fri 8:00am-5:00pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marjorie A. Moran can be reached on (571) 272-0720. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

13 November 2007

/KRS/
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